NURSERY NOTES

Forest Resources Branch
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No. 111

USE OF SUNSHINE MIX AND TERRA-PLUS AS GROWING MEDIA FOR POTTED BLACK SPRUCE

Introduction

The greenhouse floricultural industry has been successfully using a growing media sold under the trade name "Sunshine Mix". The Sunshine Mix is supposedly a "complete and quality controlled" growing media of Fisons-Western Corporation. It consists of Manitoba sphagnum peat moss, perlite, vermiculite, a wetting agent, and a starter fertilizer for potted plants.

In crops which are grown for longer periods of time in Sunshine Mix, a product called "Terra-Plus" is added. Terra-Plus is a clay aggregate fired at 1900°F that is then crushed and screened to consistent grade size by Glen D. Ogilvie Co. It is brownish red in colour, inert, physically and chemically stable and has a density of 855 kg/ m^3 (55 lbs/ft^3). Its desirable characteristics are that is improves aeration, provides excellent drainage, has good exchange capacity, keeps the soil loose and prevents the excess loss of nutrients in outdoor potted plants.

The test was set up to determine if Sunshine Mix and Terra-Plus could be used to enhance the growth of potted black spruce seedlings in the Orono greenhouses.

Methods

The physical components of the mixtures in the test were:

1) Sunshine Mix alone
2) Sunshine Mix + Terra-Plus (2:1 by volume)
3) Peat + Vermiculite (3:2 by volume) + Unimix + Dolomitic Limestone
4) Peat + Vermiculite + Terra-Plus (2:1:1 by volume) + Unimix + Dolomitic Limestone
5) Peat + Vermiculite (3:2 by volume) + Unimix + Gypsum
6) Peat + Verniculite + Terra-Plus (2:1:1 by volume) + Unimix + Gypsum.

The peat and vermiculite with Unimix and dolomitic limestone media was used as comparison in this test because it was our standard growing mixture used in all crops in 1983. Unimix, dolomitic limestone, and gypsum were added at rates of 2.4, 4.5, and 2.3 kg/m^3 respectively.

Black spruce seedlings were sown in each of the above growing media on April 25, 1983. There were 12 seedlings per treatment. The seedlings were grown until September 7, 1983 when the height, diameter, top and root dry weight of the seedlings were measured. The pH of a composite sample of each growing media was also determined.

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Results

Table 1. Summary of the Sunshine Mix and Terra-Plus Test

Treatment	Height (cm)	Diameter (mm)	Dry Weight (g) Top	Root	Total	pH
1. Sunshine Mix	22.5	3.5	3.6	0.6	4.2	6.8
2. Sunshine Mix + Terra-Plus	7.5	1.7	0.4	0.2	0.6	8.1
3. Peat + Vermiculite + Unimix + Dolomitic Limestone	26.2	4.0	4.3	0.7	5.0	6.4
4. Peat + Vermiculite + Terra-Plus + Unimix + Dolomitic Limestone	8.2	1.6	0.4	0.2	0.6	7.2
5. Peat + Vermiculite + Unimix + Gypsum	25.4	4.0	3.9	0.7	4.6	6.4
6. Peat + Vermiculite + Terra-Plus + Unimix + Gypsum	8.6	1.6	0.5	0.2	0.7	8.0

Discussion and Conclusion

The results showed that both Shunshine Mix and Terra-Plus are unsuitable for growing black spruce potted seedlings at Orono. The main problem with their two components appears to be pH. The initial pH of Sunshine Mix was 5.75 and the initial pH of Terra-Plus was 7.85. In comparison the initial pH of the peat and vermiculite mixtures without Terra-Plus was 4.7.

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